

# Low2No:

## Strategies for Carbon Neutrality

Case Study on the Low2No Competition  
Helsinki, Finland

Martin Bechthold and Anthony Kane

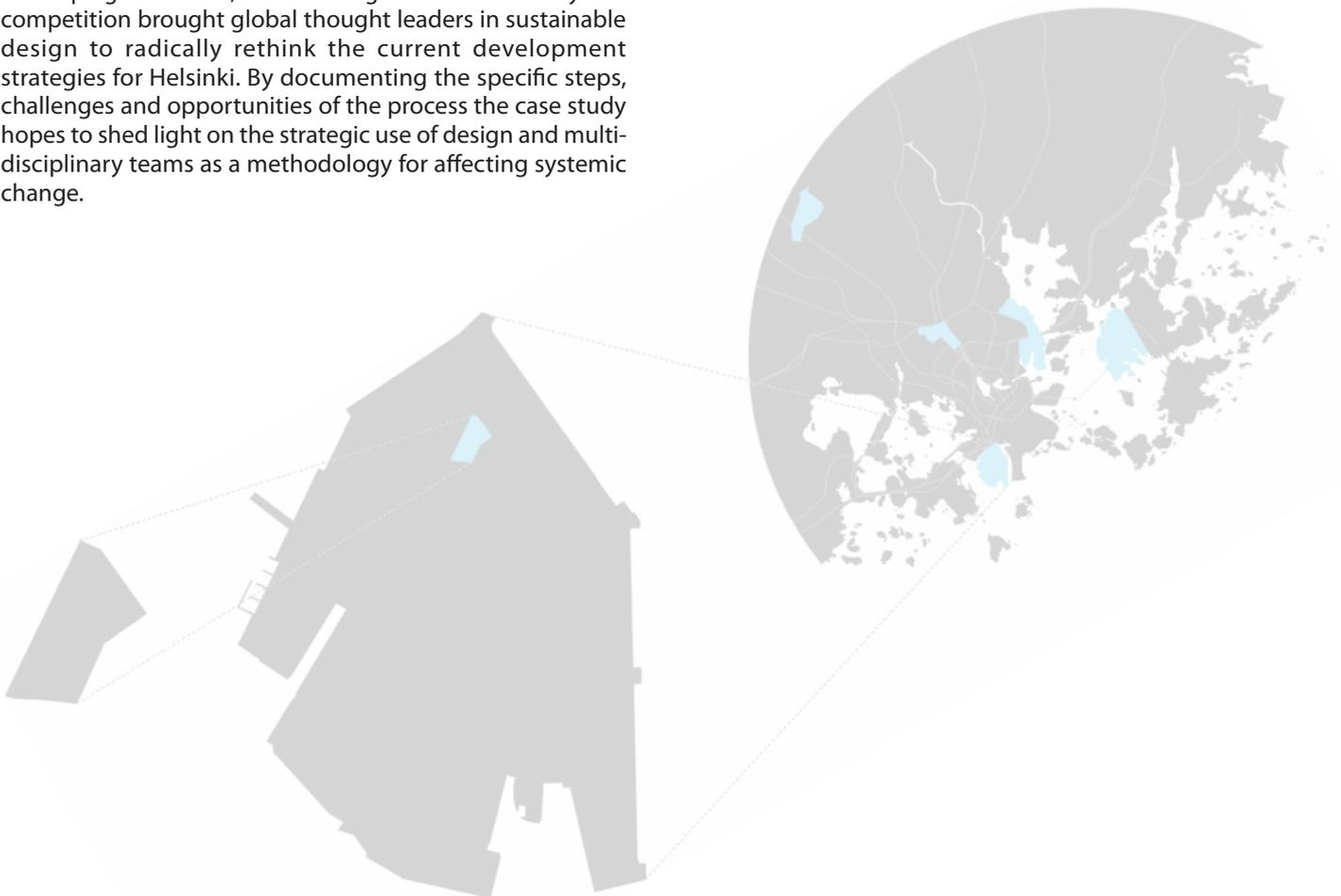


# LOW2NO

## STRATEGIES FOR CARBON NEUTRALITY

Case Study on the Low2No Competition in Helsinki, Finland

This case study documents the design and implementation of a process ultimately geared towards shifting Helsinki and Finland onto a path of carbon neutrality. Leaders at Sitra, the Finnish Innovation Fund, devised a new form of competition that employed the challenge of designing a sustainable city block in Helsinki as an experiment towards developing innovative, broad strategies for sustainability. The competition brought global thought leaders in sustainable design to radically rethink the current development strategies for Helsinki. By documenting the specific steps, challenges and opportunities of the process the case study hopes to shed light on the strategic use of design and multi-disciplinary teams as a methodology for affecting systemic change.



## PROLOGUE

“ *A systemic change is a broad, far-reaching change of the kind that simultaneously affects the structures and practices of society and the everyday life of its citizens. SITRA is an enabler of such change. To see is to do.*”

### *SITRA Mission Statement*

Architectural competitions have a history almost as long as architecture itself. Dating back to ancient Greece, competitions have facilitated the quest of potential building owners or government bodies for better buildings, urban areas, or master plans. Though computers have lately replaced drafting boards, little else has changed in this system since the 15th century. Competitions can be open or closed (participation by invitation only) and range in scope and scale. Based on a brief that outlines expectations and requirements participants develop proposals. The winners are chosen by neutral juries—and winning schemes are usually developed from design proposal into built reality. With roots in ancient democracy and renaissance republics architecture competitions have frequently contributed to increasing public interest, feedback, and support in building projects as well as encourage open debate and generate new ideas.

Design problems can be solved through competitions—but can the competition approach be adopted to address problems on a national level? The thought may seem farfetched at first, but was attempted when Sitra, the Finnish Innovation Fund, created and ran a competition geared towards developing innovative strategies for low carbon development in the Finland. Sitra’s leaders believed that the global environmental crisis, combined with Europe’s ambitious targets for reduced carbon emissions, required a radically rethinking of the way Finland had pursued the development of its built environment. By generating new ideas Sitra hoped to enable systemic change, and transform Finland into the world’s first carbon neutral country. Sitra called the competition ‘Low2No’, recognizing the objective for ‘no carbon’ urban development.

The broader strategies needed were to be developed through the study of design proposals for Sitra’s new headquarters, to be located in a newly developing quarter in Helsinki’s former port area. Implementing the newly devised principles, so Sitra hoped, were to slowly transform Helsinki and with it Finland. An international request for proposals

was published, and over 70 applications were received. In a second phase six finalists from across North America and Europe proposed a wide range of building proposals as well as sustainable development strategies. Sitra invited an international jury to select the one proposal that showed most potential for leading to Finland’s zero carbon future.

The creation of the Low2No competition was certainly a novelty for Finland, a country with a long history of societal consensus as the corner stone of change. The sources of this desire for unified national movement are in part legacies of survival strategies in the northern climate. Many other factors come to bear as well. Consensus and common action was needed in Finland during the historical conflicts with the Swedish and Russian Empires, and eventually with Western Europe and the Soviet Union. Finland transformed rapidly from an agricultural to a manufacturing and services economy in the 20th century, and it is now characterized as one of the most comprehensive welfare states in Europe. Inviting international experts to propose deep changes to a culture and a society that is quite aware of its accomplishments required Sitra to proceed in a carefully choreographed approach.

As a financially independent organization that reports directly to the Finnish parliament Sitra was well positioned to host a process that deviated so sharply from Finnish approaches, and whose outcome risked challenging Finnish conventions. Not being an actual stakeholder, but with its independent understanding of Finland’s public and private sector, of government and of academia, made Sitra the most credible curator of the ongoing transformation. Taking on this role was also a visible sign of Sitra’s change as an organization, no longer merely supporting change indirectly through investment, but actively nurturing innovation through research and the production of new knowledge. Sitra used methods borrowed from the design domain strategically in the pursuit of systemic change. The success of this approach remains to be seen – the beginning is the subject of this text.

## 1. Visions: The Formation of an Idea

### Agent of Change: the Transformation of Sitra

Esko Aho and Marco Steinberg were standing in the main studio space of Gund Hall at the Graduate School of Design (GSD) at Harvard University. On that day in October of 2007, students were busy preparing for their midterm studio reviews. Design studio, the core of the GSD curricula, teaches students to understand, analyze and resolve design problems ranging from building designs, planning strategies, to urban and landscape designs. The large, open studio space accommodates student groups of 10–12, seated for a careful balance of individual and group work. Aho, then president of Sitra, was intrigued by the intensity and open atmosphere of the work environment. Recalling his earlier experience of a similar space during a visit to Harvard's business school, he realized that his vision for Sitra as a dynamic generator of innovation was difficult to realize within the confines of the existing Sitra office tower where work spaces were spread over multiple levels. Access between levels required passing several security barriers, thus physically and psychologically separating individuals and hindering team work. Standing in the GSD studio space Aho realized the "(...) *incredible linkage between the physical structure of the building and the mode of operation at Harvard. When I looked at Sitra's tower I*



Sitra office tower



Gund Hall, Harvard GSD

*immediately recognized there was not that linkage at all."*<sup>1</sup> To Aho the GSD's open studio environment seemed to represent the type of space Sitra needed in its transformation towards a dynamic, collaborative environment that stimulated innovative thinking. But was a new headquarters building the answer?

Sitra, the Finnish Innovation Fund, was founded in 1967 as an independent public fund reporting directly and only to the Finnish Parliament. Its original focus on business development and venture-capital investments in technology enterprises changed under the leadership of Esko Aho, former Prime Minister of Finland and President of Sitra from 2004 to 2008. Aho realized the challenges of Finland in the 21st century required a profound re-thinking of Finnish policies, objectives and values. Broad systemic change was needed on all levels of society, economy and beyond, and Sitra was to lead and initiate that change. "*We (Sitra) recognized that most of the changes required now are systemic... The need now in Finnish society is not related to technological capacity or to skills, but how we use them and take full advantage of them. It requires a simultaneous bottom-up and top-down approach. We have to have the right design of operations... It's about design. (...) We recognized that Sitra's mode of operation was perfect for this type of work. We are close to the government, we understood private sector methods and operational structures better than other public sector agencies, and we had the capacity to combine people from different levels.*"<sup>2</sup>

In 2004, upon arrival at Sitra, Aho decided to add six active research programs to the traditional investment branch of Sitra, initiating the transformation of the organization into an active agent of change. By 2009, Sitra employed over 100 researchers, scientists, lawyers, and administrators pursuing work on five broadly defined programs with topics ranging from health care to mechanical industry. The teams combine knowledge of multiple disciplines, and individuals work on multiple projects within one or more programs. Programs typically run for a period of five years, and are staffed with teams of 5–10 people lead by an executive director.

Following Aho's visit to the GSD in the fall of 2007 the idea of a new Sitra headquarters gradually matured. When Marco Steinberg, previously professor at Harvard's GSD, joined Sitra in the summer of 2008, he introduced a new approach: strategic design—thinking, doing and achieving. Hired

as director of Sitra's newly created strategic design group, Steinberg's position was intended as a cross-link between largely disciplinary programs. The creation of his group was the most visible sign of Sitra's change in approach.

### From Energy Efficiency towards Sustainability

Finnish energy security, and related issues of climate change and the global energy crisis emerged as a key area of research for Sitra. In 2007 the Finnish government committed to meeting the European Union's goal of a 20% carbon emissions reduction by 2020.<sup>3</sup> How to achieve this ambitious goal remained unclear. Sitra initially responded to the challenge by introducing a five year long energy program in 2008, funded with € 50 Million, and led by Jukka Noponen. The program's mission was to reverse the Finnish trend of annually increasing energy consumption through investment strategies and studying energy-efficient user behavior. One of the energy program's three parts focused on the built environment, which consumes 40% of Finnish energy needs.<sup>4</sup>

Noponen and Steinberg soon realized that profound changes in Finnish culture, legal and investment framework, planning procedures, and energy policy were needed to respond to the daunting challenges of renewable energy, carbon emissions, and global warming. If Finland was to become a global leader in sustainability, systemic change was needed, change that expanded far beyond the design of a technically innovative building. Could Sitra's new headquarters building serve as a pilot project in sustainability, expanding thus the focus of the energy program? When conceptualized strategically, it seemed possible to employ the design and construction project for the development of replicable solutions for radically sustainable design—the building as a microcosm of newly emerging sustainable development principles. Leveraging its reputation and institutional knowledge of private industry and government, Sitra hoped to use their headquarters as an agent of change for Helsinki— eventually triggering systemic change in Finland.

“ We [SITRA] recognized that most of the changes required now are systemic... The need now in Finnish society is not related to technological capacity or to skills, but how we use them and take full advantage of them.”

*Esko Aho*

### Finnish Traditions and Systemic Change

Finland is, by common standards, a highly advanced country with an excellent education system and internationally competitive industrial companies such as Nokia, Kone, and others. Public transport systems are efficient and widely used. A challenging climate has led to a sophisticated building industry producing well insulated buildings that consume comparatively moderate amounts of energy. Finland's large timber and paper industry incinerates wood byproducts for energy resulting in a high percentage of renewable energy generation in Finland. However, fossil fuels such as coal, oil and gas meet the remaining energy needs and the associated carbon footprint is twice as large as that of other Nordic countries. To fulfill ambitious political goals of reducing carbon emissions changes are needed that cannot be accommodated within the established cultural, legal, professional and technical framework.

The type of systemic change needed became increasingly clear during the course of the project. At the outset it was evident the transformation of Finland into a radically sustainable country would require a change in broad attitudes of society, new ways of thinking and awareness for environmental issues. New legal frameworks and political strategies were needed that enabled Finland to transition into a carbon neutral country. Government ministries lacked cross-ministerial platforms to deal with issues of energy and carbon in coherent and effective ways. A national sustainability strategy was lacking. On a regional and municipal level planning processes needed to be reconsidered to take sustainable design principles into account. Education of design professionals did not include issues of sustainability.

1. Interview with Esko Aho, April 15, 2010.
2. Interview with Esko Aho, April 15, 2010.
3. In March 2007 the European Prime Ministers agreed on an Energy Policy for Europe committing to 20% energy reduction from 1990 levels, 20% increased efficiency and 20% of energy consumption coming from renewable resources (20 20 20 by 2020). A related Climate and Energy Package including legal measures to reach the 2020 targets was launched January 2008. It was further developed and amended with the most recent agreement being reached December 2008. The same policy requires Finland to increase its renewable energy to 38% from its current level of 28%.
4. The need for energy efficient planning principles, for example, was being looked at through the study of a new district in Skaftkärr near Porvoo, two hours northwest of Helsinki. A second project develops design guidelines for low-energy housing, focusing on technical solutions.



Above: Jätkäsaari port facility Below: rendering of Jätkäsaari master plan



### 3. Asking the Right Questions: The Carbon Focus

Sitra's strategic ambition demanded that only the best practitioners and international thought leaders be assembled to develop the Jätkäsaari headquarters. Noponen and Steinberg agreed that a competition was the best approach to identifying forward looking approaches to the building that could lead to generalized sustainability strategies. Finnish competitions are usually organized and run by the Finnish Association of Architects SAFA<sup>7</sup>, and the competitors tend to be local firms. Known for producing solid architectural design rather than systemically conceived sustainable buildings, the established process did not seem promising as an avenue towards re-conceptualizing sustainability in Finland. A new kind of competition, says Steinberg, needed to encourage "...people to redraw the boundaries of how they think, and reposition their skill sets. (...) Without it you will have a competition that is all about what is already known, and the standard format with standard results."<sup>8</sup> At the risk of alienating conservative local practices the competition had to encourage participation from international teams, interdisciplinary in nature, focused on medium- and long-term strategies.

#### Competition Concept

Steinberg hired Justin Cook, a recent graduate in architecture from Harvard's GSD, to help shape the competition format and develop the right questions. Both realized that the broadened competition scope, while crucial for addressing systemic change, needed a tangible and meaningful measure of success. Finnish policy had long focused on energy efficiency and reduced reliance on energy imports

from unstable sources. Cook proposed to refocus the competition on carbon instead, thus relating directly to issues of global warming and the EU's environmental goals. A low carbon design objective would broaden the issues to be considered, and include questions of people's behavior, mobility, construction materials and methods, strategies for energy infrastructure and questions of energy efficient buildings, to name a few. According to Cook "There was an increased appreciation for the potential of something like this, the potential impacts, and a recognition of how all of the elements of a competition with a wide scope would align with all of the activities and goals of Sitra. Once we made that connection (ED: to carbon) the competition took off as a much bigger thing."

Cook also presented the following list of leading thinkers in sustainability:

- Matthias Schuler, climate engineer and co-founder of Transsolar, a sustainability consultancy firm
- Stefan Behnisch, principal of Stuttgart based architecture firm Behnisch & Partners
- Jean Rogers of the international engineering firm Arup & Partners
- Harrison Fraker, architect and professor at UC Berkely
- Craig Hartman, design partner at Skidmore, Owings & Merrill, a large U.S. design practice.

In order to help develop the competition concept Sitra invited Matthias Schuler and Jean Rogers to Helsinki.

On November 11th 2008 Matthias Schuler presented Transsolar's current projects at Sitra, ranging from master plans such as the carbon-neutral zero-waste city development of Masdar, to zero-energy concepts for highly sustainable buildings. The following day Schuler met with Jukka Noponen, Marco Steinberg, Seppo Junnila<sup>9</sup>, and Justin

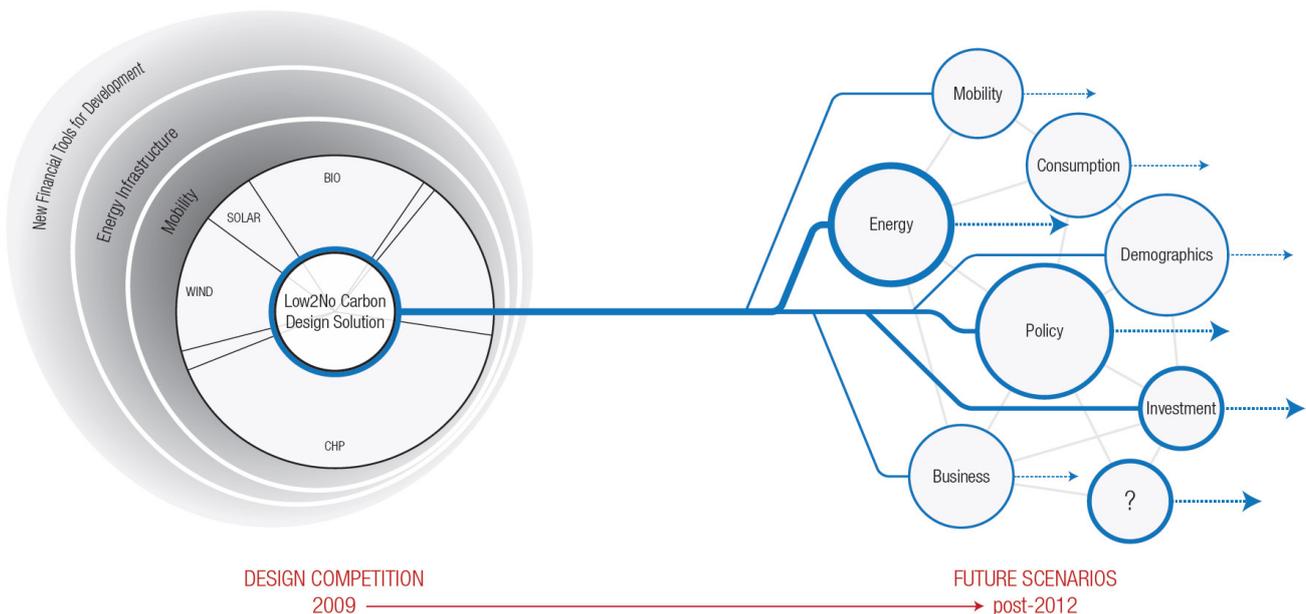
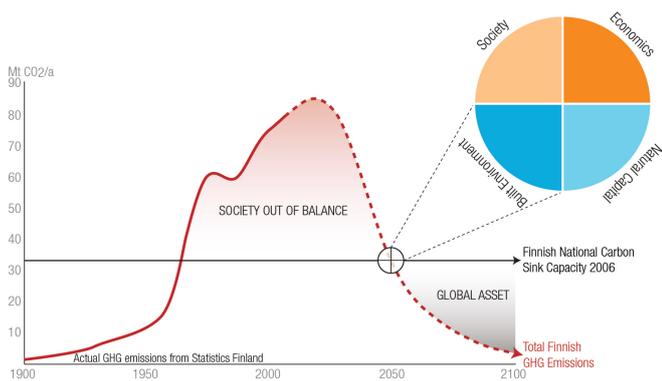


Diagram from Low2No brief



Finland's GHG emissions and carbon sink capacity

Cook for an overview of Jätkäsaari and a working session for the competition development. Together with Schuler the group further refined the competition questions, focusing on the strategic goals as well as the specifics of the Jätkäsaari site and Sitra's headquarters building. During the discussions it became increasingly clear that Sitra would have to create and run the competition in order to maintain its broad strategic ambitions for the project. Cook recalls that *"Matthias helped Sitra as an organization recognize that the competition was very much in line with their goal, and that there were broader social welfare issues that could be addressed in the competition."*<sup>10</sup> A two-phase approach seemed the most promising strategy. The initial request for qualifications would shortlist the most promising teams, which in turn would be asked to produce specific proposals.

A similar working session was held shortly afterwards with Jean Rogers from Arup's San Francisco office. It was decided to have the competing teams propose indicators that would measure progress towards carbon neutrality. Rogers emphasized the importance of the economic and human behavior aspects of sustainability, and encouraged including these issues in the brief. To raise awareness of innovative sustainable design among Finnish stakeholders the group also decided to invite representatives of various Finnish ministries to tour sustainable projects in California.

As a public organization Sitra had to ensure compliance with Finnish and European public procurement laws—considerations that prescribed the way the competition was announced and publicized, generally emphasizing transparency of process. In discussion with Harry Edelman, representative of SAFA (Finnish Association of Architects), Sitra emphasized the importance of re-thinking the Finnish competition approach in order to meaningfully address their strategic goals. Edelman, despite his association with SAFA, supported Sitra's idea of crafting their own set of rules and procedures rather than following standard SAFA protocols.<sup>11</sup>

## Low2No – Building Design as Proof of Concept

Steinberg and Cook emphasized the need to affect systemic change, but faced challenges in communicating their goals at Sitra and to the Finnish stakeholders. Juha Kostianen, then business director of the building environment part of

the energy program, remarked: *"it is clear that nobody has a clear understanding of what sustainability and systemic change means."*<sup>12</sup> Consulting with respected professionals such as Schuler and Rogers gave Sitra the confidence needed to pursue the competition as a request for research where the actual building proposal was delegated to serving as a proof of concept of systemic thinking. Says Steinberg: *"When looking around the world for sustainability solutions we found a lot of fabulous work, but at the end of the day we need to recognize that this (Ed.: field) is in its infancy. The primary task for us was to understand how we could even start to approach this problem."*

Sitra decided on a competition title that directly highlights the emphasis on carbon and the long-term, strategic objectives. 'Low2No' communicates the transition from a low carbon situation to carbon neutrality. Having clarified the overall goals and format of the competition the next task for Sitra was to draft the text and detailed evaluation process for the international request for qualifications (RFQ), phase one of the competition (see chapter 6). In a parallel effort Sitra urgently needed to find a development partner willing, in the midst of a deepening global recession, to join Sitra's leap of faith towards carbon neutral development. Finding that partner in Finland's risk-averse business culture could be challenging.

“Once we made that connection to carbon the competition took off as a much bigger thing.”

Justin Cook

5. Helsinki's metropolitan area grows at an average annual rate of 1%, and concentrating new developments close to the center is the city's strategy for optimizing the efficiency of public transportation.
6. Interview with Cook, Steinberg, 11 Feb, 2010.
7. Competitions in Finland date back to the competition for the Bank of Finland in the 19<sup>th</sup> century. Every year 20 – 30 competitions are run.
8. Interview with Steinberg, 11 Feb, 2010
9. Junilla, then business director of the portion of Sitra's energy program that was devoted to the built environment, eventually left Sitra to join Helsinki's technical university, but remained involved as a project consultant.
10. Interview with Justin Cook, 11 Feb, 2010
11. Despite support for a new and more open approach to competitions SAFA's board never formally approved Sitra's competition process.
12. Interview with Juha Kostianen, 23 Nov, 2009

#### 4. Risk and Opportunity: A Development Partnership

The programming of the Jätkäsaari site had been an integral part of the negotiations with the city leading up to the procurement of the lot. A multi-use mix of housing, offices, and retail was desirable for both Sitra and Helsinki. For Sitra the program mix would facilitate the strategic promotion of the project as a model development in sustainable design, while the city favored mixed use in order to avoid suburban commuter conditions in favor of healthy urban communities. Sitra's mixed-use program was still novel in Finland and, combined with the ambitious sustainability agenda, presented multiple risks from a development perspective. Added with the likelihood of involving international players in the project, it was far from clear that Finnish developers would risk their involvement. Noponen recalls *"The criteria for selecting a partner was the capacity to respond to the challenges... and their willingness to change and develop new processes as well as bring new ideas."*<sup>13</sup> In December of 2008, having secured the city's development agreement for the Jätkäsaari site, Sitra decided on a deadline of March 2009. If, by that time, no development partner had been committed, Low2No would be put on hold.

Initial contacts with investors such as insurance companies and pension funds stirred little interest. But some companies brought representatives of construction companies to the meetings with Sitra, who signaled more interest and willingness to try something new. Sitra widened the search, and requested proposals from five potential partners including real estate developers. All five companies were invited for initial meetings with Sitra's Jorma Jaalivaara (chief lawyer), Kari Tolvanen (executive vice president), Marco Steinberg (director of strategic design), Jukka Noponen (director of the energy program), and Magnus Sjoblom (director of finance and corporate funding).

After a first round of discussions one company, SRV, stood out among its competitors. Led by Timo Kokkila, the son of SRV's founding partner, SRV was the only company with a track record in Finnish multi-use development and experience in general contracting and construction management. SRV employed approximately 800 people (2008), and was actively developing and building real estate in Finland, the Baltic countries, and Russia. Kokkila proposed partnering up with VVO, a company that owns and operates subsidized housing in Finland, delivering approximately 800 to 1,000 units annually.

Kokkila was surprised to find himself facing a high-powered representation of Sitra at the very first meeting. To him, it was a clear signal of serious commitment by Sitra's. VVO remained involved in the negotiations, but left the lead to SRV. For Kokkila the project, while challenging, offered an opportunity to acquire new skills and knowledge for a potentially expanding business—sustainable development. Says Kokkila: *"Our organization aims to succeed in Russia, and we have invested a lot of money there. I think this project*

*can be crucial in winning big projects in Russia and in other countries."* The risks of dealing with an international and interdisciplinary design team, possible regulatory hurdles, and potential conflicts with energy infrastructure providers, however, were real. Partnering with Sitra—a well renowned organization in Finland—created a unique opportunity for SRV to manage the risk while venturing into potentially new and lucrative business domains. For VVO the involvement in a relatively small, 50 unit housing development meant a tolerable risk, far outweighing the opportunity for learning and innovating.

“ *The criteria for selecting a partner was the capacity to respond to the challenges... and their willingness to change and develop new processes as well as bring new ideas.*”

Jukka Noponen

Focused negotiations between Sitra and SRV started in February of 2009. Following a verbal commitment to partnership, the discussions concentrated on defining responsibilities and roles, and identifying risk management strategies. A preliminary agreement with SRV was in place by the request for qualifications launch on 1 April 2009—enough for Noponen and Steinberg to decide on the continuation of the Low2No project. After extensive negotiations a written agreement between SRV and Sitra was finally signed in June 2009, shortly before the finalists of the Low2No competition were submitting their proposals. The agreement outlined three distinct project phases:

- Stage one (up to December 2009) involved developing, through the competition, the basic scope and design concept. During this stage Sitra agreed to make the binding decision of moving to the site.<sup>14</sup>
- Stage two (up to the end of 2010): detailed design and project planning, application for a building permit.
- Stage three (2011 – 2012): construction.

SRV and VVO had carefully weighed the risks and opportunities—and decided to follow Sitra's lead as a way to rethink the profiles of their respective companies. Understanding Sitra's ambition for systemic change Kokkila considers that *"Sitra is the kind of organization that can succeed to achieve that goal. (Ed.: of systemic change) (...) SRV is already part of that change. We have bought the idea—we are turning the whole ship around."*<sup>15</sup>

13. Interview with Jukka Noponen, 24 Aug, 2009

14. That decision was taken in November of 2009

15. Interview with Timo Kokkila, 21 Aug, 2009

## 5. The Request for Qualifications

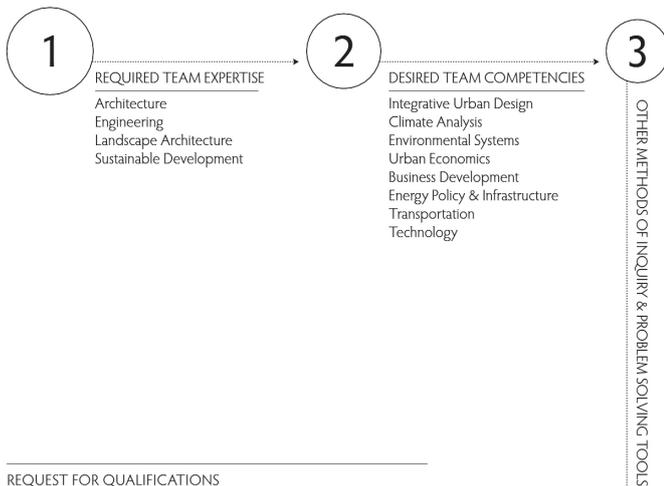
While negotiations with SRV were underway Steinberg and Cook were preparing the Request for Qualifications (RFQ) and the competition brief. Sitra needed to find a multi-disciplinary team that combined the ability for broad systemic and strategic thinking with a proven track record and excellence in sustainable design. The competition was conceived to yield an approach more than an actual design proposal. Steinberg goes as far as saying that “...we are not interested in your solution, we are interested in the mind set you bring!” The goal, thus, was akin to finding a chef based on a sample meal.

In discussions Sitra strategized that an international RFQ would initially cast a wide net and identify many possible teams, with limited cost to applicants and Sitra. The five most promising teams would be chosen to produce more comprehensive proposals in the second stage. Sitra was committed to funding the second stage finalists as well as creating a process involving workshops and other resources to help the teams deliver strategic visions rather than building solutions.

Led by Cook and Steinberg, Sitra began drafting the RFQ in January of 2009. The public visibility of the Jätkäsaari development, while desirable, also enhanced pressure to withstand public scrutiny. Finnish procurement laws required jury comments and selection criteria be made public, in fact, jury decisions could even be challenged in court. To level the playing field Sitra established three clear evaluation criteria:

- The quality of the team (0 – 40 points)
- The experience of team members (0 – 40 points)
- Evidence of systemic thinking (0-20 points).<sup>16</sup>

Unsure whether there would be a sufficient number of qualified applicants Cook sent out 35 letters on March 27th, 2009, inviting companies to select teams and respond to the RFQ.



Cover diagram for low2no RFQ

A public launch event in March 2009 marked the official start of the RFQ. Held in Helsinki under the title “Energy Efficiency in the Built Environment: Opportunities for Finland and Helsinki”, the event attracted approximately 100 to 125 mostly Finnish practitioners. Hosted by Jukka Nopponen, speakers included experts in sustainable development, as well as city and government stakeholders. Marco Steinberg explained the ideas underlying the competition, outlining the shift in focus from energy to carbon, and emphasizing the importance of long-term strategic concepts for Finland. Professionals in Finland greeted the competition with a mix of skepticism and excitement. Re-thinking sustainable design systemically challenged a profession still focused on energy consumption. At the launch event an audience member expressed concern that the desired interdisciplinarity would exclude Finnish practices, instead favoring international teams. But could profound change in Finland be crafted from within? To Sitra the need for international participants was clear from the outset. Sitra’s challenge was to help Finnish professionals see the participation of outsiders as an opportunity for learning. Systemic change was bound to come from outside, with Sitra acting in its natural role as translator and mediator between languages and cultures.

“...we are not interested in your solution, we are interested in the mind set you bring!”

Marco Steinberg

### From Local to Global

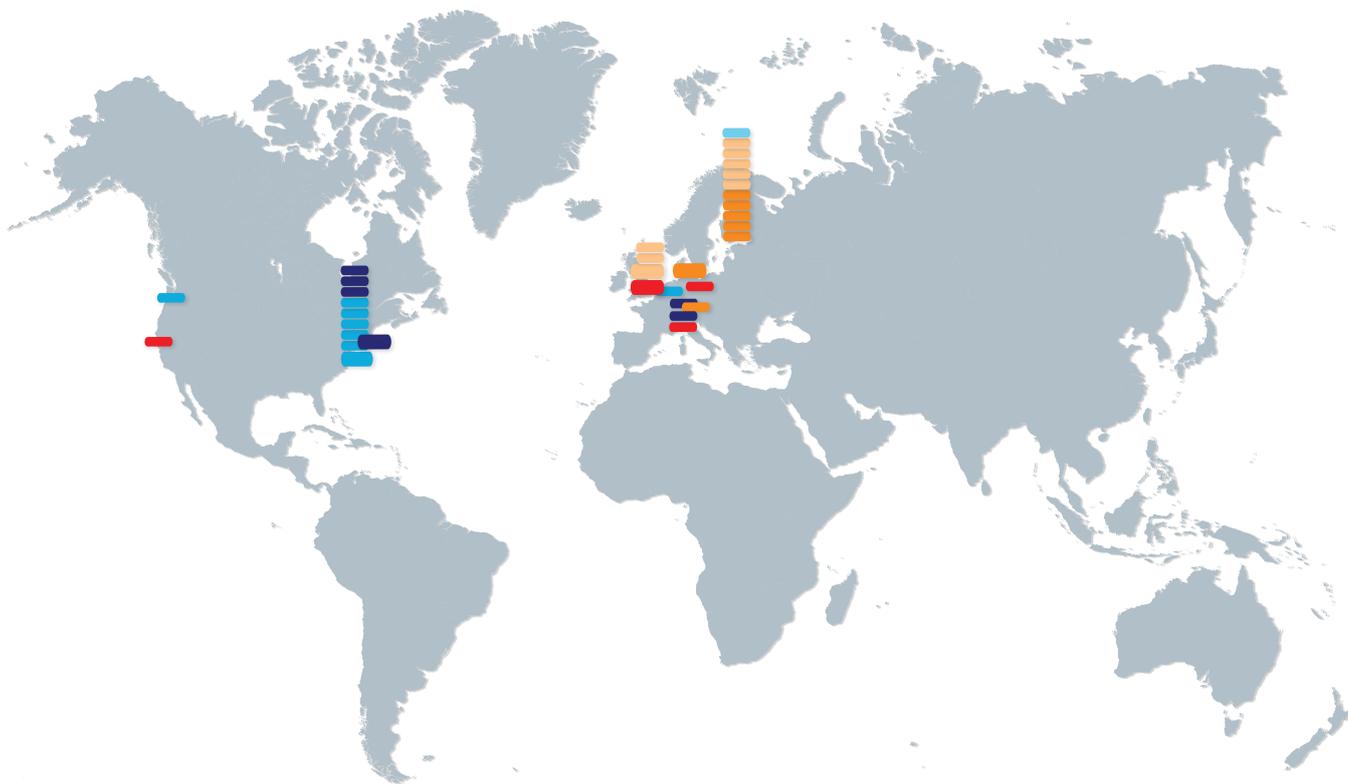
The highly international shortlist caused consternation among Finnish professionals. Tuomas Toivonen, Finnish architect and principle founder of NOW, admits: “After the results were released we realized that nobody Finnish made it, because everyone connected only with their own [Finnish] contacts. Nobody dared to get together with the best in the field, but rather partnered only with people they knew”<sup>17</sup> Sitra was faced with a politically delicate situation. Could teams without a deep understanding of local conditions and culture contribute to systemic change in Finland? According to Jenni Lautso from WSP, one of two shortlisted firms partnered with local firms, Finnish architects “were surprised because Sitra is funding the building of Finnish knowhow, and they were curious how this competition would promote Finnish knowhow when there are hardly any Finnish experts involved. But, of course, Sitra wanted to have the best available and the local actors don’t have the references these five had.”<sup>18</sup> To Sitra it was hardly surprising that Finnish firms, with their traditional involvement in local design culture, were unable to muster the expertise needed to strategize on systemic change.

After three weeks, on April 22 2009, Sitra counted 74 submittals from 23 countries. Cook and Steinberg, consulting with Johanna Kirkinen (business manager), Juha Kostiainen, and Jukka Noponen, spent long days parsing through submittals ranging from one to 60 pages in length. All submittals were ranked according to the RFQ's point evaluation system. It soon became clear that no Finnish lead-team was among the top five contenders—in fact only two of the finalists involved a Finnish firm in their consortium! The five shortlisted teams, scoring between 90 and 97 points out of 100, were lead by:

- Arup (London)
- BIG (Copenhagen)
- REX (New York)
- Rose & Partners (Cambridge, MA)
- WSP (London)

The interdisciplinary teams comprised 4 to 10 members including investment consultants, traffic advisors, groups specialized on user behavior, and various design and engineering professionals. Two of the team leaders were engineering firms, the others were architects.

16. Team quality was to be measured by scientific, analytical, political and economical competencies. Relevant experience included prior involvement in sustainability, large mixed-use development, and earlier collaboration with multi-disciplinary teams. Evidence of systemic thinking, on the other hand, was more difficult to evaluate. The RFQ listed experience with analysis, and solutions and innovations on large scale urban systems as indicators of systemic thinking.
17. Interview with Tuomas Toivonen, 20 Nov, 2009
18. Interview with Jenni Lautso, 20 Nov, 2009
19. Interview with Steinberg, 11 Feb, 2010
20. Interview with Peter Sharrat, 18 Nov, 2009
21. Interview with Jan-Christoph Zoels, 11 Nov, 2009



c_life	Reciprocity	Rebuilding 2.0	Low-Carbon High-Urban	Cradle of Innovation
<ul style="list-style-type: none"> <li>Arup (Lead) London, England</li> <li>Sauerbruch Hutton Berlin, Germany</li> <li>Experientia Milan, Italy</li> <li>Galley Eco Capital San Francisco, California</li> </ul>	<ul style="list-style-type: none"> <li>BIG (Lead) Copenhagen, Denmark</li> <li>Transsolar Munich, Germany</li> <li>ARUP Foresight</li> <li>Vahanen Helsinki, Finland</li> <li>AoA Helsinki, Finland</li> <li>Passivitalo.fi Helsinki, Finland</li> <li>Pasi Mäenpää Helsinki, Finland</li> <li>Mikko Jalas Helsinki, Finland</li> </ul>	<ul style="list-style-type: none"> <li>REX (Lead) New York, New York</li> <li>NOW Helsinki, Finland</li> <li>Croxtton Collaborative New York, New York</li> <li>Transsolar New York, New York</li> <li>Magnusson Klemencic Associates Seattle Washington</li> <li>2x4 New York, New York</li> <li>Arup New York New York, New York</li> <li>Front New York, New York</li> <li>Jonathan Rose Cos. New York, New York</li> <li>Bureau Bas Smets Brussels, Belgium</li> </ul>	<ul style="list-style-type: none"> <li>Peter Rose (Lead) Cambridg, MA</li> <li>Transsolar Stuttgart, Germany</li> <li>Michael Van Valkenburgh Associates New York, New York</li> <li>Guy Nordenson Associates New York, New York</li> <li>Mobility in Chain Milan, Italy</li> <li>ARO New York, New York</li> </ul>	<ul style="list-style-type: none"> <li>WSP Group (Lead) London, England</li> <li>WSP Finland Helsinki, Finland</li> <li>Heatherwick Studios London, England</li> <li>B&amp;M Architects Helsinki, Finland</li> <li>JK MM Architects Helsinki, Finland</li> <li>Space Syntax London, England</li> <li>Pehha Himanen Helsinki, Finland</li> <li>Helsinki University Helsinki, Finland</li> </ul>

## 6. The Competition Framework

Steinberg, sitting back in his old office at Gund Hall, is stranded on a flight from Helsinki to Washington DC. It is February of 2010, and he is in the middle of negotiating a contract with the Low2No winning team. He recalls the intense time pressure for completing the competition brief: "... we were actually seeing how you can compress time. (...) Justin was basically completing the brief while the teams 'were waiting in the briefing room.'" <sup>19</sup> Cook began research for the brief as early as September of 2008, analyzing precedent projects such as the Hafencity development in Hamburg, Germany, sustainable development in Freiburg, Germany, and the LM competition for Copenhagen, to name a few. The drafting of the brief continued during the launch of the RFQ.

Writing a brief geared towards producing a sustainable building would have been comparatively straightforward. Clarifying Sitra's broader expectations, and then effectively communicating them, turned out to be more complex. Says Steinberg: "If we had done a standard architecture competition people would have all known what the expectations were. We struggled with how to keep a balance between developing a big picture perspective and yet not disconnecting it from the architecture. We didn't want abstract concepts."<sup>19</sup> The brief was intentionally left open, leaving the balance between specific design proposals and broader systemic approaches up to the teams. In pursuit of breadth the brief asked the teams to submit three components:

- A framework for sustainable development that was replicable and could be adapted to other sites.
- A system of indicators that could provide measurable evidence of how carbon neutrality was accomplished.
- A design solution—referred to as the 'vision' in the brief—to serve as a tangible example for the implementation of the sustainability strategy, testing the degree to which it allowed for soft accomplishments such as high spatial value, vibrant neighborhoods, and changing user behavior to be realized.

The design visions also served as a case to probe the financial realities of development. For the Sitra team it was clear that sustainable development would have to be an attractive business, or else projects such as Low2No would remain isolated examples with little systemic effect. Sustainability ripples in the pond of Finnish society and economic system had to be based on profitable business models, not altruism.

The detailed brief was presented at a two-day launch event and workshop with all five teams travelling to Helsinki on June 1-2, 2009. Two weeks prior Sitra had posted the brief online, allowing teams to formulate questions for Sitra's representatives. The reactions to the brief by members of the five design teams were mostly positive, but critical voices were also present. Peter Sharrat of WSP recalls: "The brief is one of the most interesting briefs that we have seen. It had

“ It was clear that the brief constituted some of the most advanced and challenging thinking in this field. ”

Jan-Christoph Zoels

breadth of vision, depth, and really broad integrated thinking. It had what I call the right level of ambition. It's probably the only brief I have read that set the bar rather high and was quite radical. Its uniqueness was to look at an incremental change program that could over time transform Helsinki and by extension transform Finland... The brief was phenomenally ambitious which I really enjoyed."<sup>20</sup> Jan-Christoph Zoels thought "It was clear that the brief constituted some of the most advanced and challenging thinking in this field. It was daunting, it was not at all clear to us that we would win. We were a little bit in awe and we have to give credit to Sitra that they enabled such an in depth, knowledgeable, and challenging brief."<sup>21</sup> Others voiced concern about the ambition and the short time frame of only 5 weeks. According to Jenni Lautso "You can't have both detailed building design and innovative vision/strategy in one month."

The launch event featured an array of speakers providing background on Finland's economic, energy, carbon and investment context. Steinberg introduced the competition objectives, again emphasizing that the competition goal was to identify the best team for the task at hand, so focus on developing a new and comprehensive approach to sustainable design. Dinners and other social events complemented the workshop. For many teams, the Helsinki workshop was the first time they actually met in person.



Above: Teams visit Jätkäsaari  
Below: Teams listen to presentations at SITRA's office

## 7. The Low2No Competition: Process and Results

Following the launch event the teams set to work, connected by phone, video-conferencing, and meeting face-to face if possible. Each team was awarded €50,000 to fund five weeks of work.<sup>23</sup> New collaborative relationships were formed, often across long distances and overcoming different work cultures. The following impressions are indicative of the ways the different teams collaborated.

### c-life (Lead: Arup & Partners)

The Arup led team gathered Chris Trott, Alejandro Gutierrez, Jean Rogers (all Arup), Matthias Sauerbruch (Sauerbruch & Hutton), and Jan-Christoph Zoels from Experientia for a two-day charette in Arup's London office. The discussion was broad, ranging from the particularities of Finnish culture (the need for saunas), to more general topics of lighting strategies, climate challenges, and the typical quality of Helsinki's urban environment. The core team also interacted with others at their respective firms, establishing a culture of working together as well as building personal trust. Early during the two day session the idea of proposing 50 ways to change behavior came up—an idea eventually included in the final proposal. *“Our starting point from the beginning was that even the best designed and engineered building will not guarantee low or no carbon emissions, because it depends up to 75% on the people living and working in these spaces.”* says Jan-Christoph Zoels. Following the charette the team held frequent telephone conferences, but did not meet again prior to submitting the final proposal. The architects streamed ideas and concepts for the building on a daily basis into work processes in London and Milan. Many ideas were intensely discussed. Should Fins grow food on site locally, should they replace private cars with car sharing systems? At times, Mathias Sauerbruch half-jokingly explains, decisions were made based on whoever gave up first after intense debate. For Lisa Galley, Eco Galley Capital's involvement in a competition was a novelty. She remarks that, *“This competition was an example of a process where the disciplines were all brought in on the front end rather than later on.”* She

felt that Sitra as an investor had a particular interest in the proposal of a financial strategy for sustainable development. Experientia's perspective on user behavior turned out to be another significant factor that shaped the proposal. Says Sauerbruch: *“You cannot assume a ready willingness of the user to cooperate, so one has to address this problem and find ways to create an architecture that is user friendly; that makes it a simple and obvious thing for users to behave in certain ways but also to try and think of devices, methods, or strategies to provide feedback and create an almost emotional bonding between the whole cause of carbon emissions and the individual.”*<sup>23</sup>

Systemic thinking influenced the design of the building as the architects *“(…) were trying to make buildings that could be applied elsewhere as well. That's partially the reason why the project is relatively typological. It is trying to define certain types that are being applied in this case, but could also be applied in Jätkäsaari or elsewhere.”*<sup>24</sup>

### Cradle of Innovation (Lead: WSP Group)

WSP Finland had recently received first prize in Greater Helsinki Vision 2050, a regional ideas competition, and was excited to apply their vision to a specific site and project in the Low2No competition. Likewise, Peter Sharratt, the WSP team leader and partner in WSPs London office, spoke at the Low2No competition launch event and was asked by Marco to be a juror. He found the competition so compelling that he declined in favor of competing. The partnership between the London and Helsinki WSP offices seemed natural.

The rest of the WSP team was assembled to communicate a vision based on WSP's interpretation of the RFQ. For Sharratt, Sitra's direction changed with the publication of the brief, putting more emphasis on building design. Working with three architects turned out to be a challenge in developing a coherent vision.

Despite a brief video conference beforehand, the team met for the first time at the Helsinki workshop where they held brainstorming sessions. Co-locating was important to the team members but due to the distance two groups were set up in London and Helsinki working in parallel and connected through frequent video-conferencing. The architects were divided with Heatherwick Studios working in London and B&M and JK MM in Helsinki pursuing parallel design options. Both were included in the final proposal with the work of

	c_life	Reciprocity	Rebuilding 2.0	Low-Carbon High-Urban	Cradle of Innovation
Architecture	Sauerbruch Hutton	BIG AoA	REX NOW Croxtton Collaborative* Magnussen Klemenic Arup New York	Peter Rose & Partners ARO	Heatherwick Studios B&M Architects JKMM Architects WSP Group
Engineering	Arup	Transsolar Masu Planning	Transsolar* Bureau Bas Smets	Guy Nordenson and  Transsolar Michael Van Valken- burgh and Associates	WSP Energy WSP Finland Helsinki University AA Palmberg
Climate Landscape	Arup Arup	Vahanen Mikko Jalas (economics)	Jonathan Rose Companies	Mobility in Chain	Space Syntax
Development Finance	Eco Galley Capital	Pasi Maenpa (urban sociology)	Front (facade consulting) 2x4 (graphic design)		Pekka Himanen (Social Philosophy)
Mobility Behavior	Experientia	ARUP Foresight (innovation) Passivitalo (passive houses)			
Other					

\* specialty in sustainability

the Finnish firms presented as an alternative design. AA Palmberg, the team's Finnish developer generated a financial model that proved the project's viability from a development perspective. Members of the WSP team felt that Sitra should have allowed for more time, as much of the work generated could not be incorporated into the final proposal. Once Sitra extended the deadline, says Jenni Lautso (WSP), the WSP team was at a disadvantage because the extension took place during the Finnish summer break, and many had left for their vacation.

### Low Carbon – High Urban (Lead: Peter Rose & Partners)

Work on the Peter Rose team was conducted primarily in Cambridge, where both Michael Van Valkenburgh Associates (landscape architect) and team leader Peter Rose & Partner are located. Rose formed a team based on individuals rather than firms with Michael Van Valkenburgh, Matthias Schuler, and Federico Parolotto of Mobility in Chain (mobility consultants) forming the core team. Each are leaders in their field and had previously worked with Peter Rose. Rose assembled the team specifically to address issues of sustainability at the urban scale: *"you need a Matthias, a Federico, and a Michael to work at the scale of the city, and you need architecture"*. Strong preexisting working relationships led to an early consensus on re-designing the master plan—a move that distinguished Low Carbon-High Urban's proposal from all others.

Despite the lengthy process leading up to the existing master plan, the team's interpretation was the plan could be questioned and revised. Low Carbon – High Urban conducted thorough analysis and background research going so far as to determine the amount of fill the existing master plan would need to have transported to the site. Developing a new master plan created intense time pressure in an already short competition. *"The time was manageable if you only did the site"* says Rose, *"but if you look at our research the effort was huge"*. Little time was left to design the building and assemble the proposal and Schuler recalls the architectural solution being rushed in the last few days. In the end the team worked 15 hours a day seven days a week to meet the deadline. Despite the fact that Rose feels the data may not have been presented well enough in the rush to finish he stands by the decision to address the master plan: *"We looked at it and it was just not an interesting competition for only the block."*

### Rebuilding 2.0 (Lead: Rex)

After meeting the other teams at the Helsinki workshop, and reviewing the brief, REX decided to add several members to their team: Tuomos Toivonen, founding partner of NOW, offered insight into the Finnish context, Jonathan Rose Companies brought their experience in sustainable investment and financing, and Randy Croxton of the Croxton Collaborative provided expertise in sustainable design and planning. The team collocated in New York, where a majority of the team members were based. Toivonen lived in New York for the duration of the competition.

For Joshua Prince-Ramus, founding partner of REX, achieving Sitra's goals of systemic change meant going beyond a single site to address difficult political issues at the national level

and challenge the existing culture and building industry. The decision had to be made whether they would try to win the competition or deliver the right message. The team chose the latter and a core group of REX, NOW, and Croxton Collaborative set to work outlining the big picture goals. It was clear that the opportunity for affecting change was too limited at the site. They decided to look at the scale of the city, which led to the surrounding areas supporting the city. Says Ramus, *"We then had to look at all of the cities and resources and therefore at the national level"*.<sup>25</sup>

The accessibility mapping tool, to guide urban growth, was collaboratively developed by a team of REX, NOW and Transsolar, while an extended team devised the broader strategy on the level of the city. The building vision produced slender steel high-rise towers in pursuit of density. Ramus knew that many Finns would balk at such a proposal but believed it was the best strategy for Helsinki. In the end both Ramus and Toivonen believed their firms gained invaluable experience in the area of sustainability by working on the competition.

### ReciproCity (Lead: BIG)

The BIG team met several days prior to the Helsinki workshop for a charette at BIG's office in Copenhagen, determining their fundamental strategy. The hope was to attend the Helsinki workshop with initial ideas in order to get feedback from Sitra. At the workshop Bjarke Ingles, founding partner of BIG, suggested having the teams present to the jury, anticipating issues with communicating ideas.

BIG assembled a large team; including ten different companies involved to varying degrees. The size and dispersion of the team proved difficult to coordinate in a month. According to Thomas Christoffersen, the team coordinator, BIG had worked with large interdisciplinary teams before but usually on their terms as sub-consultants. For Low2No they attempted to be more collaborative and find a way to develop integrated architectural and strategic solutions. In the end, dividing the responsibilities throughout the team and retaining coherence throughout the proposal in the given time proved difficult. Matthias Rudolph of Transsolar notes *"it was difficult working on one document with five different disciplines in five different places... its a question of time."* The final proposal was assembled by BIG.

On July 8 2009, 5 weeks after the competition launch, five proposals averaging 100 pages shipped from across the globe to Helsinki. The jury decision was set for August 17, 2009, leaving approximately 4 weeks for reviews and preparation. After spending almost €500,000 on the competition, and with five international teams working tirelessly in response to Sitra's challenge, it was now up to a small jury to find the approach best suited for moving Helsinki and Finland closer to carbon neutrality.

22. Sitra extended the initially four week-long competition period by one week to allow for copyediting and collating of final documents. 6,000 Euro travel stipends were awarded separately.

23. Interview with Matthias Sauerbruch, 12 Mar, 2010

24. Interview with Matthias Sauerbruch, 12 Mar, 2010

25. Interview with Joshua Prince-Ramus, 9 Jun, 2010

## 8. Jury and Evaluation Process

### Jury Selection

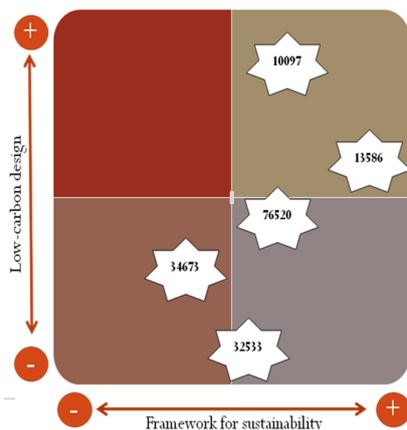
The composition of the jury needed to balance expert knowledge with the need to involve stakeholders. Steinberg hoped to create a “Noah’s Ark” of perspectives,<sup>26</sup> involving individuals with diverse backgrounds, nationalities, and knowledge. Others were needed to bridge between different cultures of thought. Personalities had to gel and allow for constructive sessions. The strategic nature of Low2No as a replicable pilot project also played a role. Steinberg wanted people in strategic positions on the jury, hoping they might “infect” others with new ideas. After much discussion at Sitra eight individuals were selected and, in March of 2009, accepted to serve on the jury.

### Expert Evaluation

Sitra had asked three experts from Helsinki University of Technology to review the proposals from a technical point of view. The group consisted of Seppo Junnila (focused on lifecycle issues and real estate), Jarek Kurnitski (focused on energy aspects, he eventually joined Sitra’s energy program), and Arto Saari (focused on construction and building technology). Sitra requested the group to “...evaluate if these ideas are feasible, in principle. If someone had said we want to cover the building in solar panels we wanted them to say whether or not that was feasible.”<sup>27</sup> The report produced, as a visual mapping of their findings, a chart showing the relative strength and weaknesses of the five proposals, based on a quantitative analysis. A summary of the findings was presented to the jury

### Jury Deliberations and Decision: August 17 and 18

Sitra’s boardroom is located at the top of the Sitra office tower, overlooking the harbor and the Jätkäsaari site. Spacious, with a large outdoor terrace, it was to serve as a jury room for selecting the Low2No winner. The plywood paneled walls of the room were lined with the five group’s presentation panels, showing summaries of their projects.



Technical evaluation diagram

## The Jury

Finnish jury members included the following:

**Ralph Lindberg** represented Finnish expertise in issues of energy. A respected expert in Finland, he also connected the project with Tampere University, after Helsinki University the second most important academic institution in Finland.

**Kimmo Lylykangas** is one of the few architects in Finland specialized in energy efficient building design. Sitra had previously collaborated with Lylykangas in his role on the Finnish team for the solar decathlon that was funded by Sitra. He also teaches at Helsinki University of Technology.

**Helena Säteri**, an engineer by training, is Director General for the Department of the Built Environment under the Minister of Housing. Her work focuses on the regional and national level. For Steinberg it was important to involve the government that would ultimately be able to influence national policies and, in Säteri’s case, create land use guidelines for municipalities.

**Matti Kajansinkko**, the city planner responsible for the Jätkäsaari master plan, provided a local planning perspective from within the city’s extensive planning department. His long-standing personal involvement with the planning of Jätkäsaari gave him unique insights while making the evaluation of fairly conceptual and systemic approaches potentially challenging.<sup>28</sup>

International jury members included three academic experts from the United States:

**Michelle Addington**, Associate Professor at Yale University, is an expert on environmental technologies and sustainable design, with a focus on buildings. Her background is both in mechanical engineering as well as in architecture.

**Harrison Fraker**, Professor of Architecture and Urban Design at Berkeley University’s College of Environmental Design. A former founding dean of the College of Architecture and Landscape Architecture at the University of Minnesota, Fraker was educated both as an architect as well as an urban designer. His research focuses on sustainable urban design.

**Christian Werthmann**, Associate Professor of Landscape Architecture at Harvard University, is a landscape architect with extensive practice experience in the United States and in Germany. Werthmann’s background is in landscape architecture with a special focus on urban design. His teaching and research focuses on landscapes in dense urban areas.



## c\_life

The c\_life proposal takes a combined bottom-up and top-down approach focusing on human behavior and community development.

The proposal's energy strategy estimates an onsite reduction of 40% with the remainder offset by investment in offsite wind farms. Funding would come from the development of a carbon neutral district which would, among other things, establish carbon neutral policies, create a revolving fund for offset projects, and attract green banks to provide green mortgages. The inclusion of financial strategies is inspired by the low2no brief, which asked teams to "consider how their proposals generate wealth across stakeholders and find ways to define price in a way that does not externalize costs onto society".<sup>1</sup> In addition, one of the competition's six evaluation criteria was, "feasibility including economic efficiency and life cycle cost".

The human behavior component is based on a persona approach which relies on ethnographic data to develop profiles of hypothetical inhabitants. Estimating that occupant behavior can affect building performance as much as 50% the proposal suggests "50 ways to change human behavior". The methods cater to the personas and range in scale and complexity; from an informative card game for children to a web and mobile information distribution system displaying energy consumption. The sustainable lifestyle is supported by an information infrastructure that informs community members about sustainable choices. C\_life proposes to link information

campaigns, legislation, economic frameworks, and civic infrastructure to encourage both a grassroots, and government regulated, movement toward sustainability.

The project indicators include 16 parameters within five categories: overall measure, carbon emissions, energy, transport, and quality of life. Detailed information is provided for each parameter including how it is measured, a target performance for 2012, a current comparison of performance, whether the indicator is input based (controlled at the design phase) or outcome based (measured results), and a summary of the rationale behind the indicator.

The architectural vision is relatively generic suggesting its possible adaptation to various contexts. Its variety of public, private, and semi-public spaces respond to detailed programming needs. The proposal generally accepts the provisions of the masterplan and the building requires only minimal changes to the plans site massing.

For c\_life architectural form and high-tech systems are not enough to achieve sustainability. Subtle and more strategic components include green mortgages encouraging collocation of 25% of employees. Residents are to grow as much as 50% of their food in winter gardens along the façade.

1. Low2No brief

Steinberg began the deliberations with a summary of Sitra's strategic goals for the project, again emphasizing the need to find the best approach, and not necessarily the best solution. Sitra remained firmly committed to building their headquarters with the winning team! The initial discussion touched upon a wide range of questions, mostly clarifying the mindset to be used when judging the competition entries. Could the master plan still be changed after having been voted on by the city council? What were the most pressing environmental problems? How high was the recycling rate in Helsinki? Was mold the most pressing environmental problem of Finnish construction? Steinberg kept reminding everyone to look beyond the details and focus on the approach to the problem of sustainability as it emerged through the often detailed, sometimes general, proposals.

Following the initial discussion the jury divided into pairs for more detailed review of the projects. The findings were presented to the group, again followed by discussion. After a silent vote, three of the proposals emerged as top contenders—Rebuilding 2.0, Low Carbon-High Urban, and c\_life. C\_life fared well on many levels, but some jury members wanted more specificity, especially on an architectural and technical level. Rebuilding 2.0 proposed a tower that would need an exception from the zoning limitations of the master plan—the strategy was based on increasing density. But was a tower the right prototypical solution for Finland? Was density the sole vehicle for the Finnish pathway towards sustainability? Low Carbon-High Urban, more radically, put forward a new master plan based on a study of sun and daylighting. It was difficult for the jury to understand how this team would adjust their proposal to align more realistically with the existing master plan. The proposal, on the other hand, included compelling landscape and mobility studies that gave evidence of broad systemic thinking.

Some jury members agreed with the critical assessment of the master plan by several competition teams. For some the density was too low, for others it did not take sunlight exposure for either buildings or streets into account. Still for others it did not recognize the site's strong southwesterly winds. Should competition entries be allowed to break the

rules the master plan put forward? Was there still time to change the plan?

Matti Kajansinkko from the city's planning office vehemently opposed any radical changes to the master plan, developed under his leadership over 8 years, but admitted that density or building setbacks for the site could still be adjusted. For Steinberg even proposals such as Low Carbon – High Urban with its completely new master plan were not automatically disqualified. He notes *"We didn't want to exclude the opportunity that somehow the master plan could be impacted, but you can't erase the master plan. You have to take it as a given and figure out where the space for opportunity is. I hope we communicated to the teams that we were interested in an approach and not a solution."*<sup>29</sup> But judging a proposal that challenged every aspect of the existing master plan was difficult for the jury. Major changes for phase 1 of the master plan—which included Sitra's site—were simply unrealistic. Infrastructure construction had already begun and was clearly visible from Sitra's board room during the jury meeting. Later phases of the master plan, Sitra hoped, might still be impacted by the outcome of the competition. Had Sitra accurately communicated what level of flexibility existed for the master plan? Day one ended with more questions than answers.

The next morning Steinberg began by summing up the deliberations of the previous day. He dwelled briefly on the notion of combining several projects, seeing that no clear favorite had emerged the previous day. The discussion continued with a brief summary of the technical report. C\_life had provided few quantitative aspects of their proposal, and, as a consequence, ranked lowest among the five teams. Rebuilding 2.0 and Cradle of Innovation ranked highest in the report.

Before the next round of votes Steinberg suggested to list, in preparation for the jury report, the strengths and weaknesses of each project. It became clear that certain issues were not addressed by any team. No proposal considered the potential effect of climate change or other future trends, and all proposals were found lacking in whole systems integration. Another useful element of strategic relevance would have been the proposal of energy conservation and load reduction targets for Finland.

The following vote ranked a first and second proposal for each of the following six criteria:

- Low2No carbon solution
- general approach to sustainability
- sustainability indicators
- urban and architectural quality
- replicability
- feasibility

Rebuilding 2.0 and c\_life almost tied first and second votes, but c\_life slightly outnumbered Rebuilding for first place votes. After more discussion Steinberg requested a final vote to select a winning project. It was 5 pm, and after two long days of reviews and discussions c\_life dominated over Rebuilding2.0 with 8 to 3 votes. Despite some skepticism, and recognizing the fact that all projects had their strengths



The Low2No jury in deliberation

## Low-Carbon High-Urban

Low Carbon–High Urban redraws the existing Jätkäsaari masterplan to increase density and improve urban quality. It states a single building or city block cannot achieve the low2no goals and, “problems like energy supply, water, waste, and traffic must be handled at an urban scale”.<sup>1</sup>

In the new plan massing, streets, and public space are arranged in a north-south grid to increase daylight in the streets up to nine times over the current masterplan. Traditional Helsinki courtyard buildings are replaced by linear blocks to encourage street life and increase daylight through strategies to capture light for the interior and redirect light into the street.

The grid is an “armature for flexible growth”<sup>2</sup> where the block unit could be replaced with a variety of uses, such as public space, transit, and civic infrastructure, creating diversity as the district develops. The increased density is achieved by reducing the development area by 22 hectares and increasing the number of residents from 16,000 to 21,500. Other strategies include sloping the north-south streets towards the sea to increase views of the water. These sloping boulevards contain bio-filtering canals, critical elements of the proposal’s landscape plan, treating runoff and channeling it to retention ponds along the coast. Transporting fill, necessary in the current masterplan, is eliminated by removing hectares of the existing land mass; creating a canal to separate the port facilities from Jätkäsaari.

The current car culture in Finland is a detriment to urban quality and density; taking land away from development. A detailed study in the proposal’s appendixes proposes easy tram access and underground parking in Jätkäsaari as well as a regional transit plan for the greater Helsinki metropolitan area.



The plan claims a major reduction in energy consumption from 16,500 kWh/year per person to 800 kWh/year per person (-95%). An appendix includes an overview of global and Finnish energy consumption but no proposals for limiting onsite energy use are suggested. Strategies to reduce carbon emissions include a 180,000m<sup>2</sup> photovoltaic ‘blanket’ over the district roves and a biomass cogeneration plant located near the port facilities. A 94% reduction in carbon emissions is achieved through a combination of “building improvements” (42%), solar thermal (6%), biomass heat (14%), and biomass cogeneration (32%). The sustainability indicators are nine points of quantitative and qualitative target values for “today”, “tomorrow”, and “2030”. Targets include energy consumption, ecological footprint, air pollution, and more.

The architectural solution is a rectilinear volume with programmatic flexibility. Interior plans or sections, were not provided. It has a modular facade and a concrete/wood hybrid structure using local wood products. The proposal relocates the Sitra building to what is described as a more preferred location in the new urban plan.

Low Carbon–High Urban is a top-down approach that uses master planning to meet ambitious goals of high density and urban quality of life. The bio-filters, cogeneration plant, “solar blanket”, and mobility plan are all large scale district-wide solutions. Within these larger structures there is a flexibility to promote diversity as a key element of urban quality. The proposal suggests that for the question of sustainability density is the answer, and high urban quality the means to achieve it.

1. Low Carbon – High Urban Proposal pg. 1
2. Low Carbon—High Urban Proposal



and weaknesses, the jury had come to a clear decision. The Low2No competition had been decided!

The c\_life team, led by ARUP's London office, included Sauerbruch Hutton as architects, Experientia as user behavior experts, and Galley Eco Capital as sustainable investment consultant. The jury report on the winner summarizes "The team's proposal best met the Low2No competition assessment criteria. Furthermore the jury found great promise in the outlined strategy that combined both a clear top-down as well as a bottom-up strategy for leveraging the Jätkäsaari opportunity in the spirit of the Low2No challenge. The jury felt that particularly the consumer/behavioral framework coupled with a monetary/economic model brought the best balance to this holistic strategy."<sup>30</sup>

### From Competition to Project

Sitra announced the competition result during a public event at which all five teams presented their approach. In his overview Steinberg clarified the competition as a way to rethink sustainability in Finland: "Without an architecture of the problem we don't have an architecture of a solution."<sup>31</sup> While refreshments were served participants reviewed the panels, until, at last, deputy mayor Hannu Penttälä announced the winner c\_life. The five teams were previously notified, but for the public this was the much anticipated results announcement. Following Penttälä's presentation Steinberg briefly outlined the jury's reasoning behind the decision.

The teams' reactions to the decision ranged from relief to bitterness. The REX-led team had almost expected not to win, after proposing a tower that not only violated the provisions of the master plan, but broke so decidedly with Finnish building culture. Many team members expressed regrets about being unable to present their scheme in person to the jury, and Steinberg agrees: "I think it would have been nice to have the teams engage in a discussion with the jury. Ultimately we were trying to weigh their intellectual capacity and experience."<sup>32</sup>

Alejandro Gutierrez, c\_life's team leader from Arup's London office, believes that accepting the master plan worked out

“ The jury felt that particularly the consumer/behavioral framework coupled with a monetary/economic model brought the best balance to this holistic strategy.”

### Jury Report

well for c\_life:<sup>31</sup> "We didn't challenge the master plan in the traditional, formal way. We challenged [Ed.: the master plan] in its understanding of sustainability and how you implement it through software and policy. The master plan actually does well in terms of microclimate analysis. As for formal decision like the shape of the park—it is not our concern."<sup>33</sup> What some may critique as a lack of specificity of the c\_life architectural proposal was a conscious decision to signal flexibility and show a way of thinking instead of a rigid top-down design proposal. Matthias Sauerbruch takes a very pragmatic attitude on the design itself: "If the architecture needs to change, we will change it." He adds: "We all had our misgivings and doubts about the master plan, but the misgivings had mostly to do with the fact that it seems relatively conventional. It is roughly based on European urbanism with the addition of a park that is shaped like the Grand Canal. On an intellectual level it may be debatable and one wouldn't have chosen to do that, but that is not what city planning and city making is about. (...) We tried to accept the very straightforward and plausible urban framework that was given and turn it into something positive."<sup>34</sup>

Matthias Schuler, one of Transsolar's directors, was particularly displeased with the competition result. After advising Sitra in the early preparation phase, Transsolar participated in

“ I feel we need the best new ideas from the world for our marvelous new places like Jätkäsaari.”

### Hannu Penttälä



Mikko Kosonen makes opening remarks at launch event



Deputy Mayor Hannu Penttälä announces the Low2No winning proposal

## Reciprocity

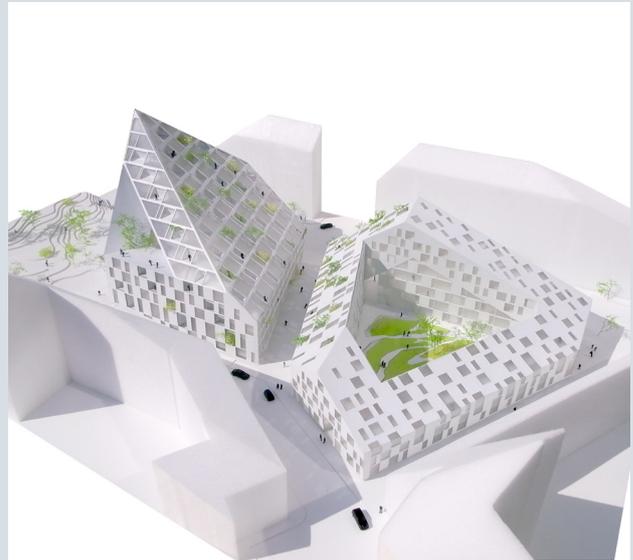
The Reciprocity proposal provides a set of general design rules that could be applied to any development in Helsinki. These rules are then adapted to the specific site in Jätkäsaari. A give-and-take relationship develops during the implementation of the strategies, hence the proposal title 'reciprocity'.

Integral to the design rules are several strategies for optimizing daylight both in the interior and exterior. One strategy creates a regular street grid rotated 45 degrees for equal light access to both primary and cross-streets. Another strategy chamfers the building forms according to specific sun angles. Accepting the street layout of the existing master plan this form optimization is adopted in the project proposal, whereas the rotated street grid, inappropriate for Jätkäsaari, may be implemented in future developments. Rules for wind mitigation are also provided, but the primary driver of building form is solar access.

The design proposal offers two versions of the traditional Helsinki courtyard building. The first is a perimeter block with an open interior courtyard, and the second replaces the courtyard with a covered atrium. Each is carefully shaped to control daylighting.

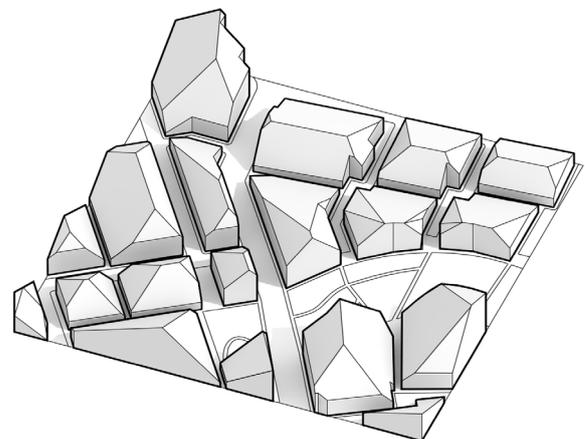
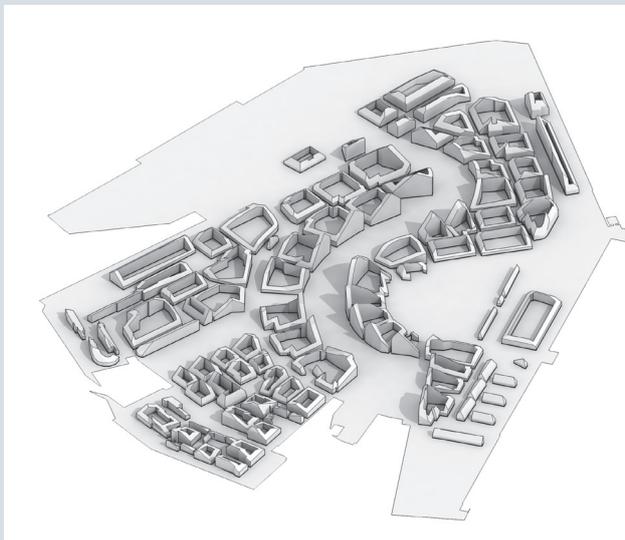
Among the unique energy strategies proposed in Reciprocity are the use of bio-waste collected on site, the storing of excess summer heat in the bedrock, and capturing waste heat from ferry boats.

In response to the request for indicators the proposal provides two matrixes. The first is for the design and construction phase. It lists quantitative and qualitative criteria in environmental, social, and economical categories, and applies them at the scales of the masterplan, block design, building design, and unit design. Specific targets, however, are not included.



The second matrix applies the same framework for the building occupancy phase. Some criteria are borrowed from existing sustainability rating systems, and the proposal recommends adopting either the LEED or PROMISE approach.

Reciprocity outlines the important issues to consider on a wide variety of sustainability related topics, but leaves many details to be addressed during the design phase. It develops design rules driven by solar access as an example of this approach. Overall it attempts to address the issues of scale that arise in developing a sustainable framework. Reciprocity establishes and communicates simple and clear universal principles that can be adapted and customized to the site specific conditions at hand.



three of the five teams without, in the end, moving forward with a winning proposal. All three teams had, in varying degrees, questioned and changed the master plan—which in Schuler’s view is a key element for achieving Sitra’s goals of systemic change: *“This [Ed.: the competition outcome] is not changing the world! A lighthouse project which has an impact on its surrounding master plan, from the master plan into the city concept of Helsinki, and from there into a concept for all of Finland, yes, then Finland could have been a great example in Europe of how ambitious a nation can think. Now, even if they do a very ambitious project on the site but leave the existing master plan the project will change nothing at all.”*<sup>35</sup> Peter Rose shares this view: *“There was a contradiction in how the competition was set up. It was clear that the competition was for a specific building on a specific site in the existing master plan. It was equally clear that the outcome they were looking for was systemic change at a large scale. Those two things were in conflict.”*<sup>36</sup>

Was the Low2No brief flawed from the outset? Parts of the brief, when looked at in isolation, indeed suggest that an adaptation of the master plan was desirable. Page six of the brief, for example, states that *“Sitra’s point of departure for this project is the recognition that while the city block must be the locus of design solutions for the competition, the goals of low or no carbon emissions and sustainable development cannot be achieved without considering larger scales...”* The slight ambiguity of the wording might reflect Sitra’s need to keep the city and its planning office as a major supporter and stakeholder on board. But the brief is also clear in stating that the first phase of the master plan is to be realized by 2012—hardly enough time to go through an extensive process of revisions. *“Phase I will be completed by*

*2012... The southwestern edge of Jätkäsaari will be the final area of development. This provides a large window in which to evaluate and potentially alter development in the remaining phases”* (page 14 competition brief). A ripple down effect on the later phases of the master plan was not explicitly excluded—in fact Steinberg and Cook were hoping for a Trojan horse effect of Sitra’s development. *“The master plan has been in development for 10 or 12 years. There is so much political and financial investment, and even though people realize that there are serious misgivings about the master plan there isn’t the political will to undo those. It’s a freight train.”* says Steinberg, and adds *“Hopefully, if we are lucky, phase three (Ed.: of the master plan) will incorporate some of the principles we are working with.”*

Low Carbon–High Urban was the most extreme in questioning the existing master plan, proposing an entirely new plan and a new site for Sitra’s headquarters. Did breaking the rules in such obvious ways automatically lead to the exclusion of the project? For some jury members it was rather difficult to look beyond the actual design proposal and judge the proposal by its approach. Cook, however, does not believe that the team’s reworking of the master plan automatically eliminated the proposal: *“I don’t think they lost because they changed the master plan. They took the Masdar approach which is ‘we can only start from the ground up’. The competition is all about a transitional strategy. I think it would have been different if they had at least acknowledged phase one was going to happen. Without recognizing what was already happening on the ground it was very difficult. The rest of his proposal was very content rich.”*<sup>37</sup> Steinberg agrees and adds: *“It was fabulous, and I think the jury was disappointed about the disconnect between the richness and the opportunity, and the way it was positioned strategically.”*

“Without an architecture of the problem we don’t have an architecture of a solution”

Marco Steinberg



The five proposals are exhibited and discussed at the launch event

26. Interview with Marco Steinberg, 30 Oct, 2009
27. Interview with Marco Steinberg, 11 Feb, 2010
28. Noponen had invited the city’s planning department to name one person for the jury, and they chose Kaijansinkko.
29. Interview with Marco Steinberg, 11 Feb, 2010
30. Low2No Jury Final Report
31. Steinberg at Sep 1, 2009 launch event (from webcast)
32. Interview with Marco Steinberg, 11 Feb, 2010
33. Interview with Alejandro Gutierrez, 23 Nov 2009
34. Interview with Matthias Sauerbruch, 12 Mar, 2010
35. Interview with Matthias Schuler, 29 Jan, 2010
36. Interview with Peter Rose, 18 Feb, 2010
37. Interview with Justin Cook, 11 Feb, 2010



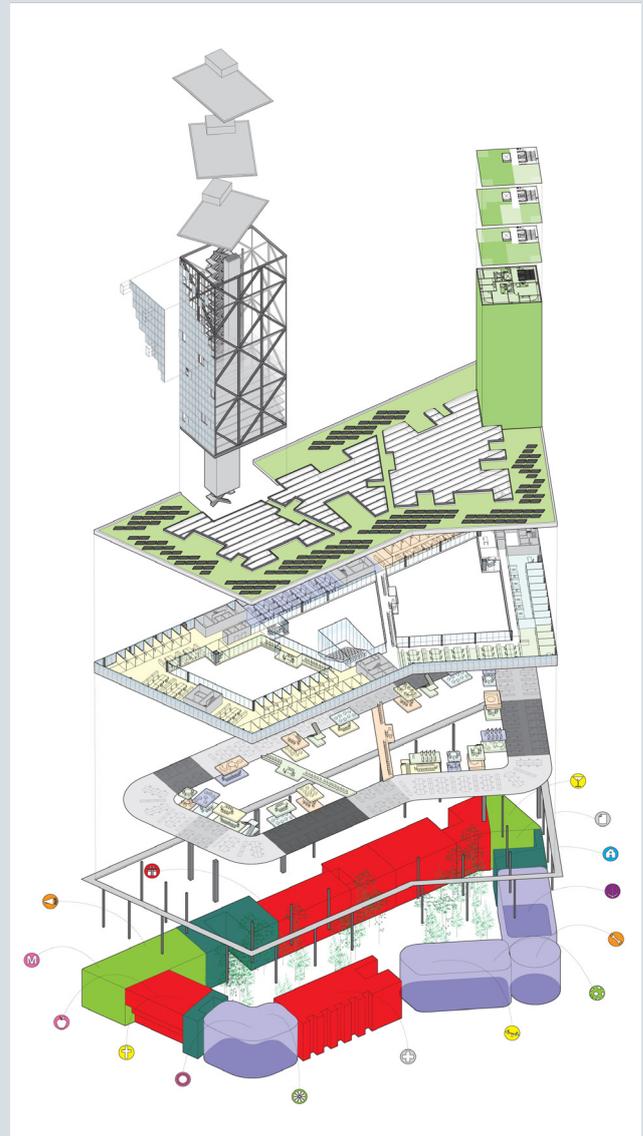
## Rebuilding 2.0

The Rebuilding 2.0 proposal asserts density is the primary factor in sustainability. Starting from data that illustrates Finland's increasing suburbanization it states a reduction of the average daily commute by 10 km would eliminate a carbon equivalent of a 50% reduction in energy use for home heating. Five key strategies are presented in depth to achieve zero carbon.

The first establishes growth boundaries to limit sprawl. The second is the transfer of development rights in conjunction with the growth boundaries. Funds from increasing urban development rights within the growth boundary are used to create conservation easements in Finland's vast less populated interior. Third, is a mapping of urban accessibility to improve public transportation. Acting together the three strategies encourage urban development, limit sprawl, and increase urban quality of life.

The fourth strategy includes the competition indicators. Rebuilding proposes amendments to Helsinki's current set of Core Indicators for Sustainable Development (CISD) as well as developing a sustainable rating system that goes beyond LEED to include "site specific, future driven, and value centered" criteria. A diagram outlining the system is included.

The fifth strategy repopulates the urban core by adding new building mass. The proposal inserts slender high rise towers into the Helsinki perimeter blocks to increase density and limit impact the existing urban form. In Jätkäsaari, two residential towers are set above a two-level plinth of offices. The base building is raised 14m above the street, providing a zone of flexible development and infill to be used by small businesses and institutions. This zone will be a constantly adapting urban fabric, while the office and residential towers remain permanent. Slender steel exoskeletons replace



traditional concrete to minimize material consumption. On the façade vacuum insulated panels offset their cost by increasing usable floor area.

Rebuilding 2.0 proposes similar towers be implemented across Helsinki, creating a new vertical element in the traditionally horizontal skyline. The proposal retains the existing masterplan but suggests rephrasing the development. By increasing the block density more land is reserved for future development, including exceptional uses such as a university campus.

The general theme of the proposal is that sustainability is about doing less. Buildings should be constructed efficiently with minimal materials. Low impact lifestyles require density proximity to amenities. The strategies focus on codes and zoning where the largest change can be affected systemically with the smallest impact.

## 9. Dissemination

With the competition decided Sitra geared up to communicate the results and involve stakeholders. As a first step all five teams were asked to draft a letter about the challenge of sustainability in Finland, summarizing the lessons learned. This letter, addressed to the inhabitants of Helsinki, was to be published in local newspapers and magazines. While some teams submitted their statement others refused. Motivation for additional work on Low2No was understandably minimal for the four losing teams. Those teams that did write were then surprised to learn that Sitra deemed the letters unsuitable for immediate publication, instead decided to keep them for future opportunities.

An area of potential development and outreach to stakeholders was the need to help Finnish investors understand the opportunities of investing in sustainable real estate. Sitra asked David Wood, a Boston based specialist on responsible investment strategies, to work with them on developing a so called 'sustainable investment toolkit'.<sup>38</sup> The project outlined investment opportunities and challenges for all stakeholders. For public investors, for example, it was important to understand how the success of a sustainable community could be measured. Private developers, on the other hand, needed to understand risk management strategies and costs of sustainable development. Other issues were also addressed. As part of the project, Sitra cohosted with SAFA in November 2009 a conference on sustainable investment. Among the speakers was Jonathan Rose, a world leader in sustainable investment and a participant in the Low2No competition.

The sustainable investment toolkit related to another initiative—the development of a national sustainability strategy. Throughout the Low2No competition Sitra remained in touch with Jan Vapaavuori, Minister of Housing and supporter of the Low2No approach. With new elections on the horizon Vapaavuori's time in office was running out,



Jonathan Rose speaks at SAFA event



Helsinki Design Lab Sustainability Studio

but since Sitra's efforts had raised awareness for sustainability among design professionals and in the government he decided to establish a parallel effort. Following established government protocols he initiated the formation of a working group charged with developing a National Sustainability Strategy. The group was initiated in January of 2010, and included members of ministries and other stakeholders.

The working group model, a process commonly used by the Finnish Government, involves publishing intermediate reports that undergo multiple stages of review by stakeholders and the public. Compared to the Low2No process time allotments are reversed: little time is spent in establishing and briefing the group, but over half a year is allowed for the final report. Sitra, by comparison, spent more time on developing the questions and challenges than actually generating proposals and responses. Vapaavuori notes that the working group report usually reflects a broad consensus, and also involves comparisons with other countries.<sup>39</sup> He admits that consensus-based approaches can result in doing more of the same, but, on the other hand, prevent Finland from "doing anything really stupid".

As an alternative and parallel approach to the government led effort for a national sustainability strategy Sitra re-activated the concept of the Helsinki Design Lab—originally a design workshop dating to the 1960's. For the summer of 2010 Sitra organized several sessions that used the studio model borrowed from design education, such as practiced at Harvard's GSD, to brainstorm and discover solutions for pressing problems in Finland. One of these week-long sessions was on outlining a pathway towards carbon neutrality and innovation in the built environment. Participants included Federico Parolotto of Mobility in Chain, member of the Low-Carbon High Urban team, Matthias Rudolph of Transsolar, contributing member of the Reciprocity team, and Seppo Junnila.

38. Wood had visited Sitra in May of 2009, giving advice on the competition and meeting with SRV's Timo Kokkila.

39. The required international comparisons are normally limited to neighboring countries such as Sweden or Denmark – countries with cultures akin to Finland.



### Cradle of Innovation

Cradle of Innovation takes a process based approach to sustainability. Rather than prescribe a solution it outlines tools to inform decision making based on project specific conditions. The proposal describes this as the replicable “DNA” from which various approaches responsive to site, context, design, and client would be developed.

A materials and building systems evaluation method is outlined; assessing the appropriateness of materials and construction technologies in relation to their longevity, embodied carbon, recycled content, and code rating. The proposal also includes an analytical framework for strategic programming to better determine the potential for flexible and adaptable spaces. An accessibility map of Helsinki and Jätkäsaari is provided to inform transit decisions. Finally, Cradle of Innovation outlines an in depth new carbon accounting methodology and applies it to the project. This carbon monitoring method would

be used to determine the effectiveness of the Low2No development after completion.

The sustainability indicators are grouped into three categories of design and development, community and lifestyle, and city, according to major stakeholder groups. Each category contains metrics that fall within the proposal’s six overarching “vision themes” of generative and healing, innovation, transforming sustaining generations, economic value, and leadership by example. Target values are left to be determined. The proposal recommends integrating the Low2No indicators with existing guidelines such as the World Bank’s Sustainable City indicators or the indicators of Finland’s National Assessment of Progress Toward Sustainable Development.

The architectural vision is a radical inversion of the traditional Helsinki perimeter block. It envisions a permeable building group forming a public urban courtyard that can be utilized year round. The block becomes a “public space which has the characteristics of a vibrant street scene”.<sup>1</sup> The design is presented as a permutation of a process driven approach that, under different circumstances, could lead to a completely different form.

The proposal includes an implementation framework outlining a ten year plan with target goals in six categories of policy and regulation, commercial/ financial, public engagement, partnerships, procurement and management, and consumer choices. Cradle of Innovation focuses on low2no’s desire to be a transitional strategy. Its methodologies ask pertinent questions believing better informed decision making, maps, and frameworks will guide the team to the best solution.

1. Cradle of innovation Proposal



## 10. Scope of Work: A Contract for the Future

The completion of the Low2No competition was hardly a time for pause at Sitra—it was just the beginning. The winning team needed to establish contractual links with SRV, VVO, and Sitra in order for the project to move from ideas to implementation. Sitra was still hoping design work could begin in January of 2010. But aligning expectations between SRV and VVO on the one hand, and the design team on the other, turned out to be a lengthy and cumbersome process.

### Culture Gap

Informal talks between SRV, ARUP, and Sauerbruch & Hutton were held on September 2, a mere day after the official announcement of the competition result. Multiple meetings followed, leading to the submittal of a formal scope of work (SOW) to Sitra and SRV on October 7. Reviewing the SOW SRV immediately realized that the fees proposed by ARUP were approximately 10 times higher than what they had initially estimated. Kokkila (SRV) recalls: *“In October Arup was able to make their first offer, and it was just way too much... The question was who was going to pay for this?”*<sup>40</sup> SRV had assumed the Low2No carbon approach might incur a premium for design costs, but the proposed amount was unrealistic. Kokkila started to eliminate line items, knowing well that doing so would never bring down costs enough. At the October 7th meeting the differences in expectation opened sharply. Steinberg was concerned: *“This thing is slipping out of our hands. We are talking different languages here.”*<sup>41</sup>

Many at Sitra had initially assumed SRV would take the lead in the contract negotiations, with Sitra merely steering the process. The Sitra team now realized they had to be active mediators, helping to bridge a wide expectation gap. Simply sending out a scope of work via email, and getting responses back was clearly not working. The design team and SRV needed to find a common language and shared ground for the project to succeed. More time was needed than initially allotted for contract negotiations.

Sitra organized a series of workshops to build mutual trust and understanding. The first was held on December 4th in London, followed by a second workshop a week later in Berlin. Both introduced the design team’s approaches and working methods to SRV. In Berlin, SRV visited an energy-efficient tower designed by Sauerbruch & Hutton, and engineered by Arup. Seeing the finished building, and reviewing the construction documents produced during its design was helpful especially for Kokkila and his colleagues from SRV. Skepticism still prevailed during the workshop in London, but in Berlin mutual confidence began to build. From the Finnish perspective the schematic design phase was an entirely new element in the scope of work. Finnish developers were used to seeing straightforward design drawings based on the detailed provisions of zoning plans and program, virtually eliminating schematic design altogether. The Low2No

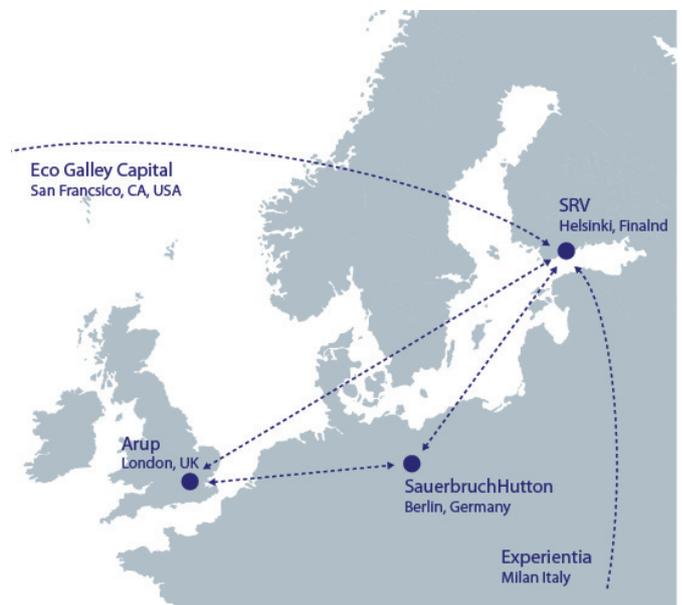
project, however, required substantial development work—the competition scheme could not simply be ‘drawn up’ for planning permission!

During the London workshop SRV began to explain what information they needed by when, and Arup discussed whether they could deliver it. Merging the Finnish requirements with Arup’s standards for developing an ambitious project began to seem feasible. Jean Rogers observes that *“It is interesting how we as a team are coming to grips with what can be achieved on a very real project, with a real schedule, and a real budget versus a competition where you put your wildest dreams and hopes out there and hope the client falls in love with them the way you did.”*<sup>42</sup> While progress had been made no contracts had been signed. Pressure was mounting—after all, Sitra had spent close to €500,000 on developing and hosting Low2No. Sitra committed to a deadline at the end of February—ready to stop the project if no contractual agreement was reached with SRV.

Sitra organized a third workshop for December 14-15th in Helsinki. The first day was spent meeting potential local partners—engineers and architects legally entitled to sign drawings in Finland. Groups proposed by SRV were ultimately chosen as local partners without much controversy. For Sitra the involvement of local firms was not merely about overcoming the inability of Arup and Sauerbruch & Hutton to

“ *It is interesting how we as a team are coming to grips with what can be achieved on a very real project, with a real schedule, and a real budget versus a competition where you put your wildest dreams and hopes out there...*”

Jean Rogers



Project team workshops held in London, Berlin, and Helsinki

sign permit drawings in Finland. Instead, local partners were crucial for allowing knowledge transfer from the experienced Low2No team to Finnish professionals, beginning to 'infect' Finnish modes of practice and directing them towards more sustainable goals. Sitra hoped to have responsibilities shift increasingly to local partners as the project moved from design to implementation.

The second day Experientia, joining from Milan, led a workshop focusing on user experience. Jan-Christoph Zoels had already met several times with Arup's Alejandro Gutierrez in Milan, working on scoping and on how to craft their collaboration with user behavior experts at Arup. Galley Eco Capital had worked with Arup and Sitra to determine their contribution and scope of work, but SRV remained unconvinced about Galley Eco Capital's contribution. To solve the dilemma Sitra decided to sponsor the purely systemic aspects of the project directly, covering the development of issues such as general finance strategies, starting the carbon neutral district, and initiating a change in building codes to support new sustainable development strategies.

VVO, the publically owned company that was to own the Low2No project's housing units, saw the project as learning opportunity, introducing them to the new territory of sustainable housing. Even though VVOs involvement in the negotiation process had been fairly small, the company was now motivated to work out a mission statement that included sustainability as a key component. The interest in sustainability, as Sitra had intended, began to spread.

## Moving Ahead

After three months of workshops and meetings Arup delivered a revised SOW in the middle of January, just days after finalizing the partnerships with most of the local professional firms. Certain elements of the SOW were removed, and others made more comprehensive to VVO and SRV. Key elements such as the sustainability strategy and the human behavior component remained—unique elements not only for the Finnish context, but essential for the Low2No project. Arup as the original team leader was charged with the overall integration and oversight of the project. That role would have traditionally fallen onto the architects who now, liberated from the overall coordination, could focus fully on delivering and developing the design. Says Matthias Sauerbruch: *"I expect a lot of change. That was how the project was conceived. It is not a specific solution in terms of a specific building feature at that particular location, but it is more thought of in terms of urban typologies that will help to support a more sustainable lifestyle."*<sup>43</sup>

The client team's deadline was quickly approaching, but contract details still needed to be ironed out. SRV and the design team were getting close to a consensus. After additional negotiations the contract was finally signed in mid-March. After over 14 months of intense work, Sitra was ready to move towards implementing its Low2No principles. Sentiments ranged from relief to anxiety. Intense work lay behind the Sitra team, but all knew that signing the contract was only the beginning. Even though Low2No had succeeded in its new approach, it was clear that success would not be defined by building a sustainable building. Mikko Kosonen, Sitra's president, reflects: *"Hopefully we can demonstrate in*

*Jätkäsaari a new approach to urban planning and building, and eventually a new approach to urban living. If people will be happier and more productive, then we have succeeded, and we have succeeded only if the model we demonstrate starts spreading. (...) If the way construction companies, architects, and urban planners work together has not changed as a result of this, or the lifestyle of people is not better or different, then we have failed."*<sup>44</sup>

Sitra had reached a crucial turning point as an organization, transforming from investor to client in a pilot project that experimented with a new approach towards systemic change. Low2No had already begun to make an impact, affecting Sitra, the city of Helsinki, the Finnish government, as well as the Finnish design profession. The challenge of the years ahead is not only to follow and lead the Jätkäsaari project, but to make sure its lessons are learned beyond Sitra and its partners. Carbon neutrality, after all, remains an essential question for Finland, Europe, and for the world.

“*Hopefully we can demonstrate in Jätkäsaari a new approach to urban planning and building, and eventually a new approach to urban living... we have succeeded only if the model we demonstrate starts spreading.*”

**Mikko Kosonen**

40. Interview with Kokkila, 14 Apr, 2010

41. Interview with Marco Steinberg, 11 Feb, 2009

42. Interview with Jean Rogers, 29 Oct, 2009

43. Interview with Matthias Sauerbruch, 12 Mar, 2010

44. Interview with Mikko Kosonen, 20 Nov, 2009

# Competition Timeline

